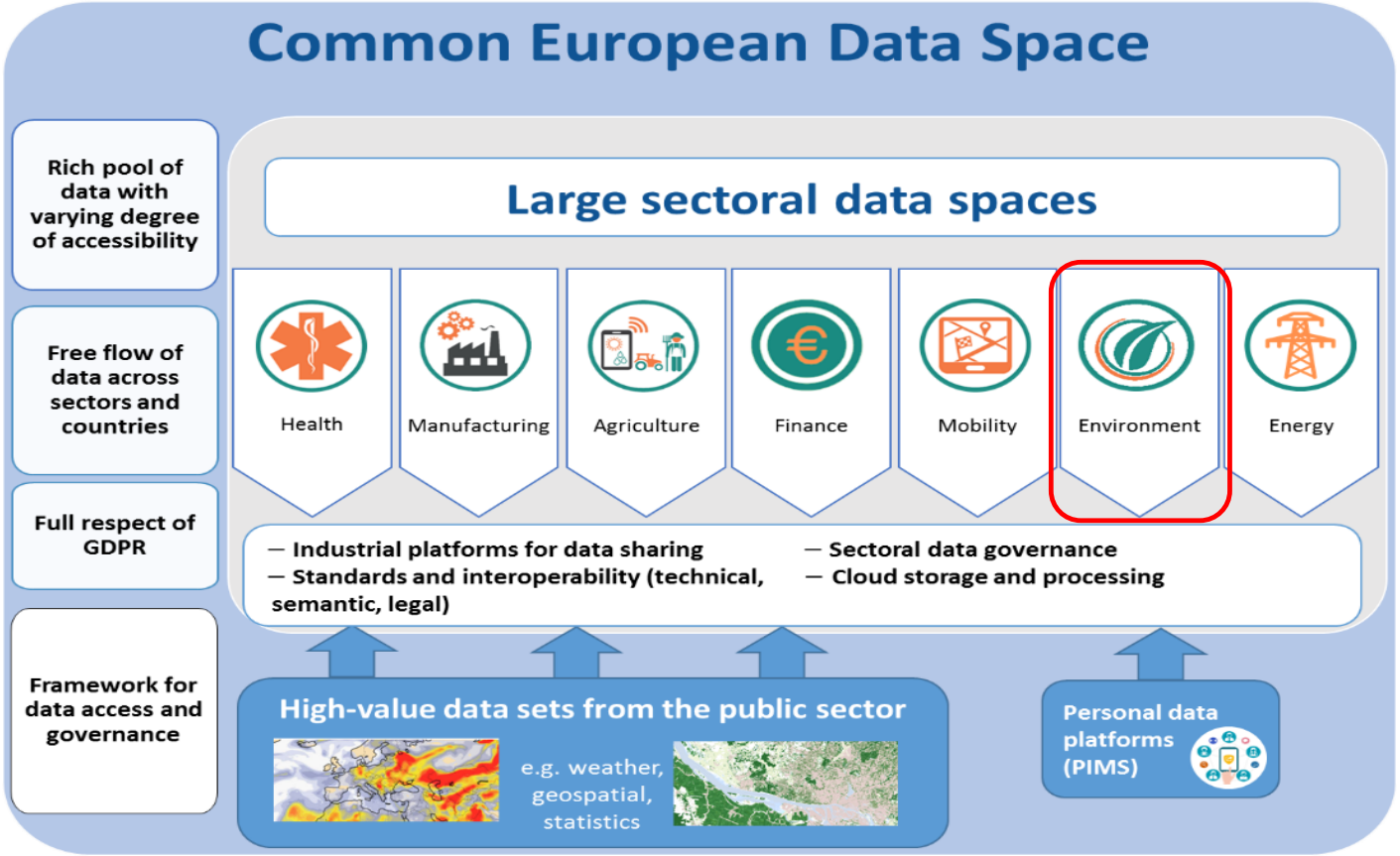
Sharing geospatial data within the European Green Deal Data space – a technological and organisational perspective

Francesco Pignatelli, Alex Kotsev

UN-GGIM Europe Side Event: European Data Policy

The policy context around data

- **European Strategy for Data**:
  - Establishment of a single market for data through sector-specific data spaces.
  - No explicitly geospatial data space
  - Different actors interplaying in the data economy (public sector, businesses, citizens, and academia)



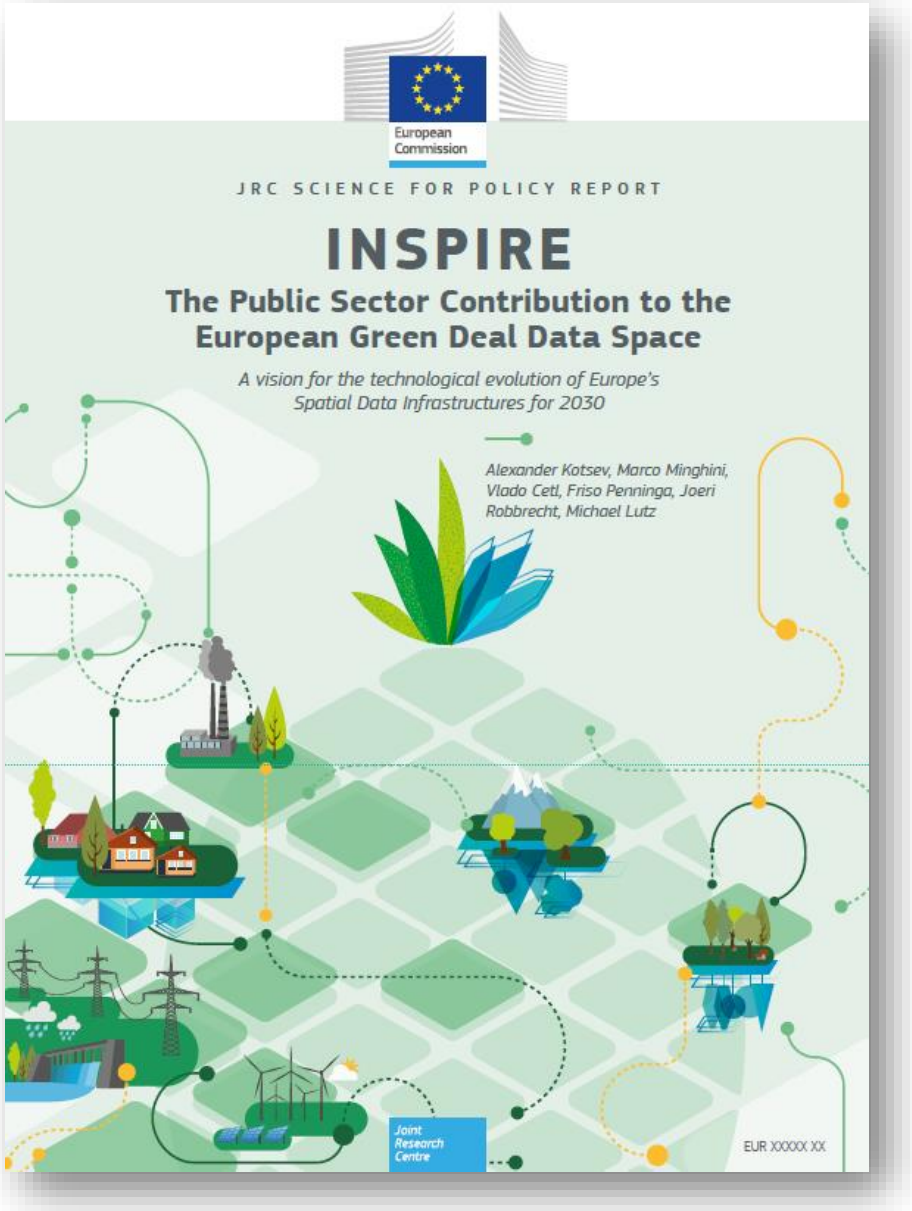
The technological context around data spaces

- Paradigm shift from open to shared data
- New data sources:
  - Internet of Things (IoT)
  - Citizen-generated geospatial data
  - Open FAIR research data
  - Private data
- From data collection to data connection
- Novel architectures (e.g. SOLID)
- Mature and versatile tools
- Agile standards

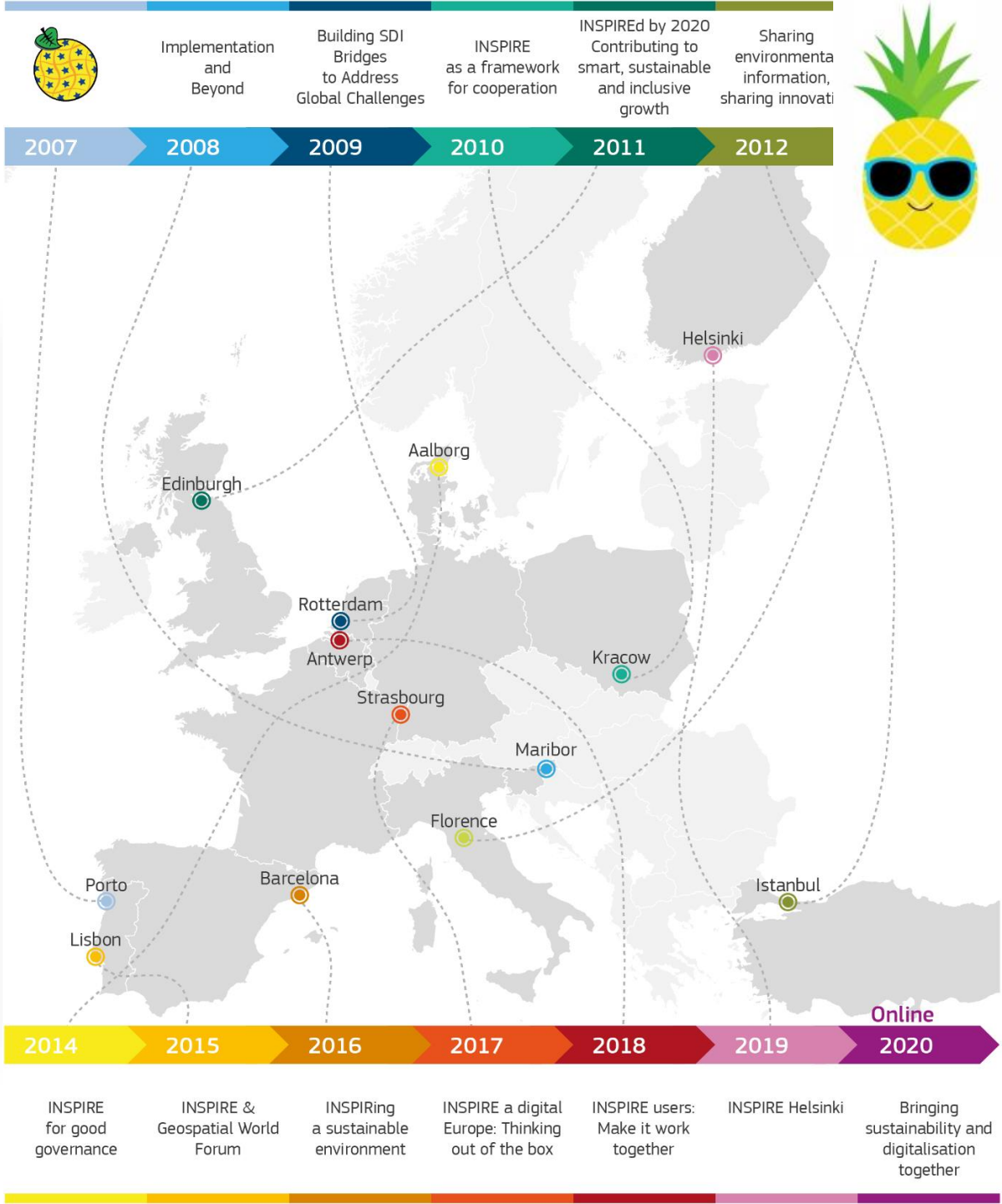
How to modernise INSPIRE/SDIs within European Data Spaces?

JRC Science for Policy Report

- Prepared in collaboration with ENV and Geonovum
- Contents
  - State of play
  - Policy and technological context
  - Lessons learned from the implementation
  - Vision for the technological evolution
  - Prototype reference framework
  - Actions and roadmap

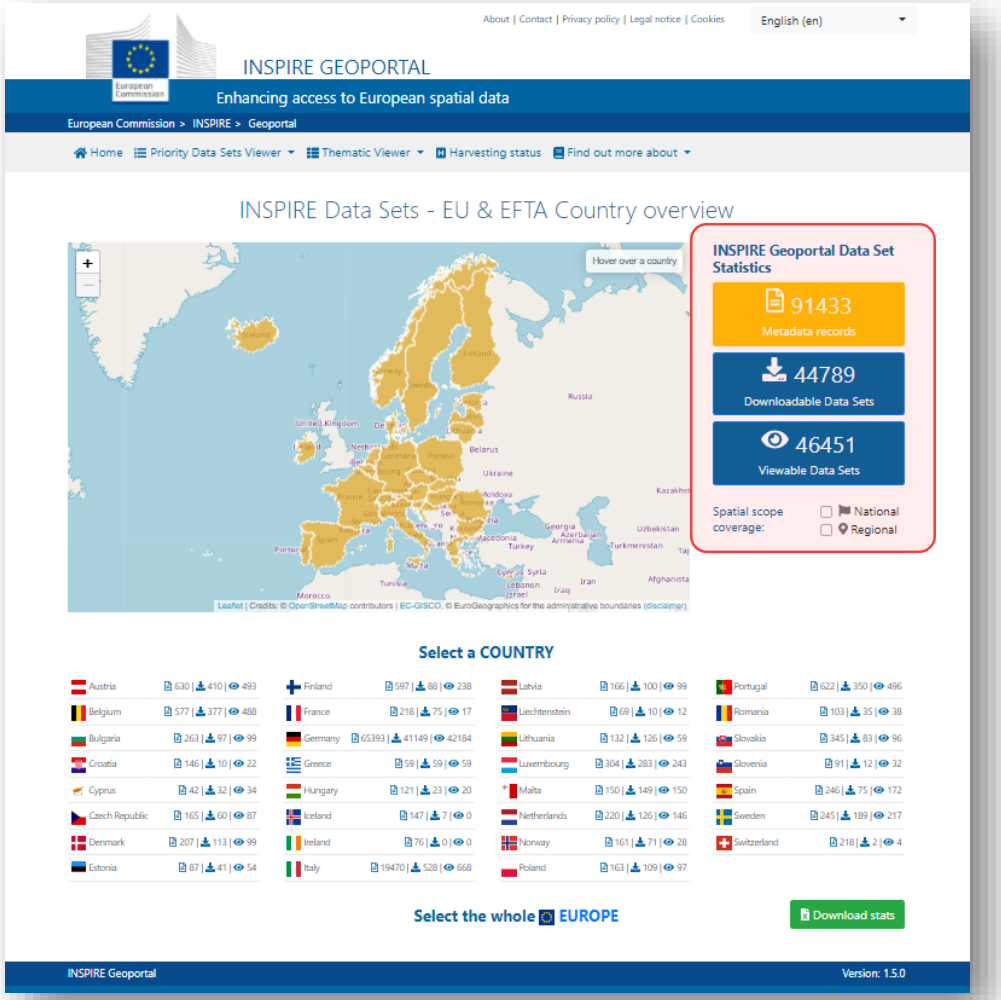


Lessons learned
Community

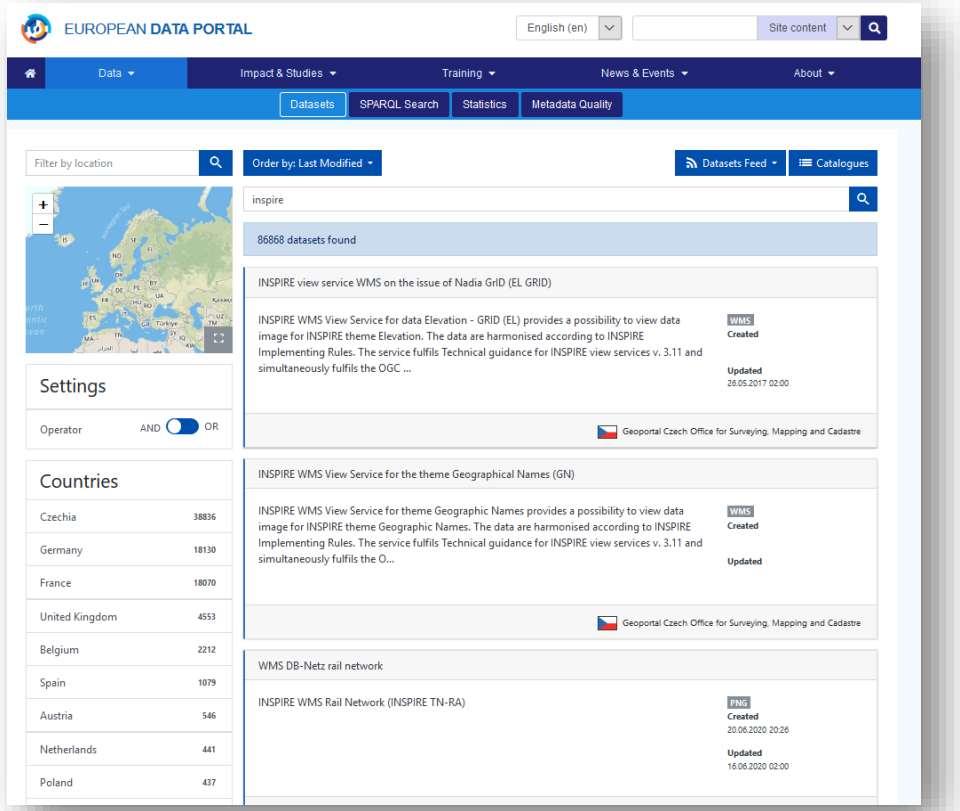


Lessons learned
Data availability & E-reporting

- Improving discoverability and accessibility



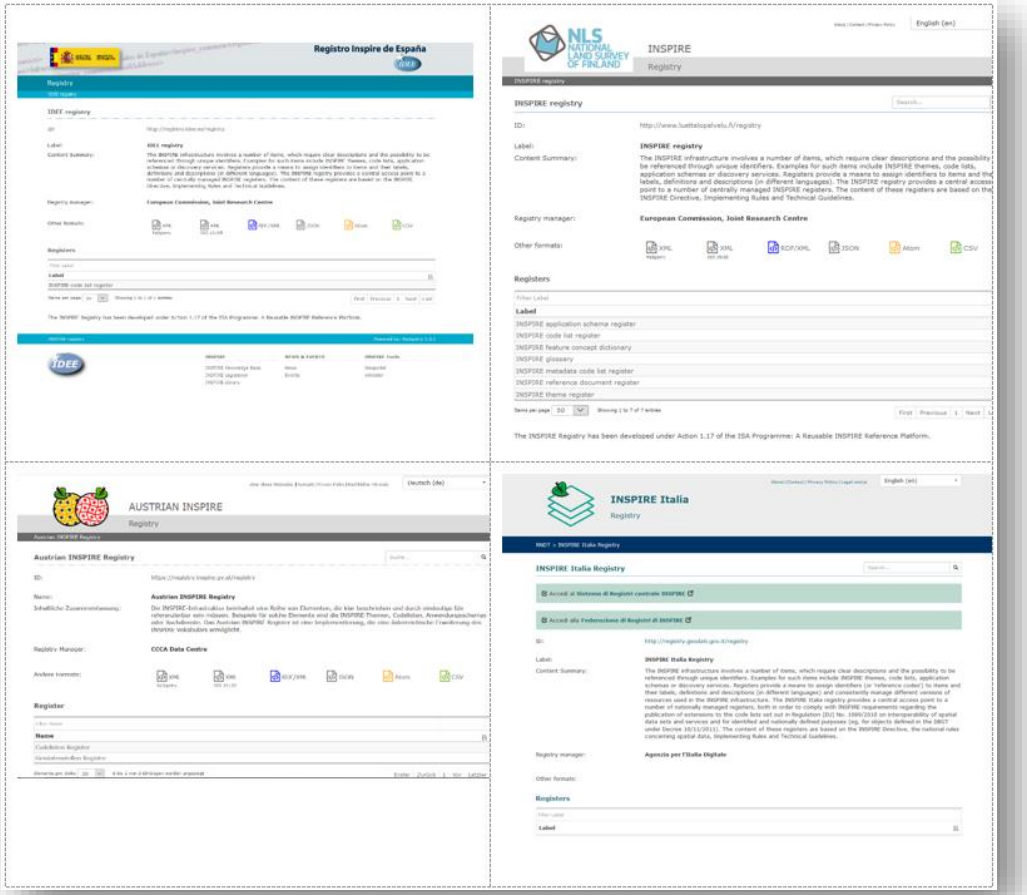
- Use of INSPIRE in e-reporting.

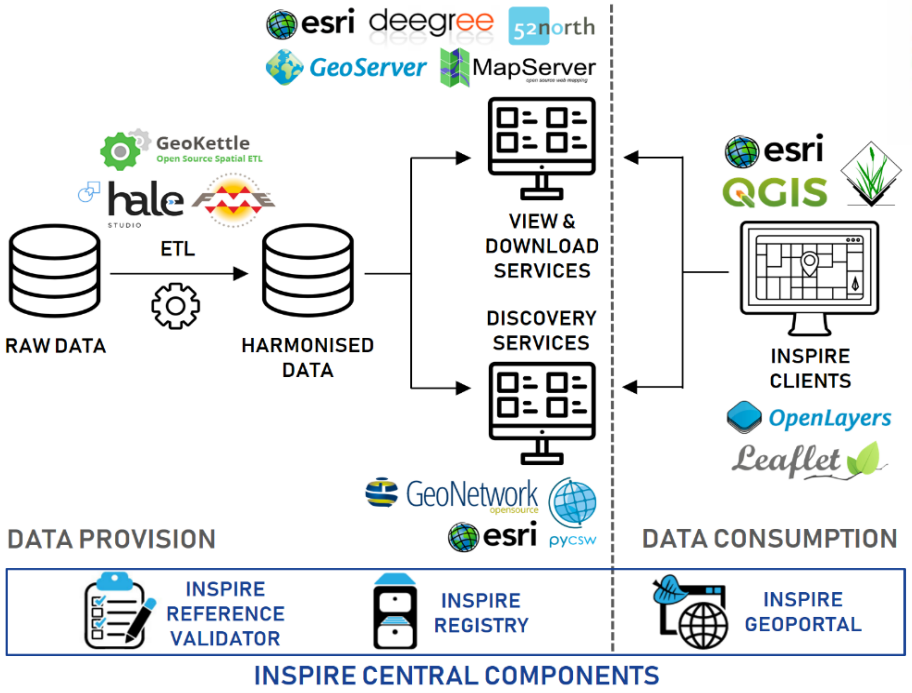


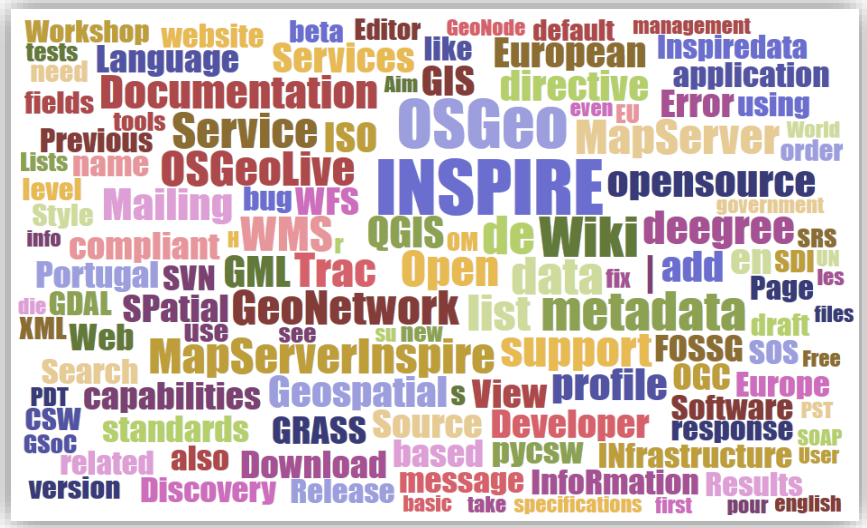
Lessons learned

Rich ecosystem of tools

- Reuse of central INSPIRE components.
- Many client and server implementations.

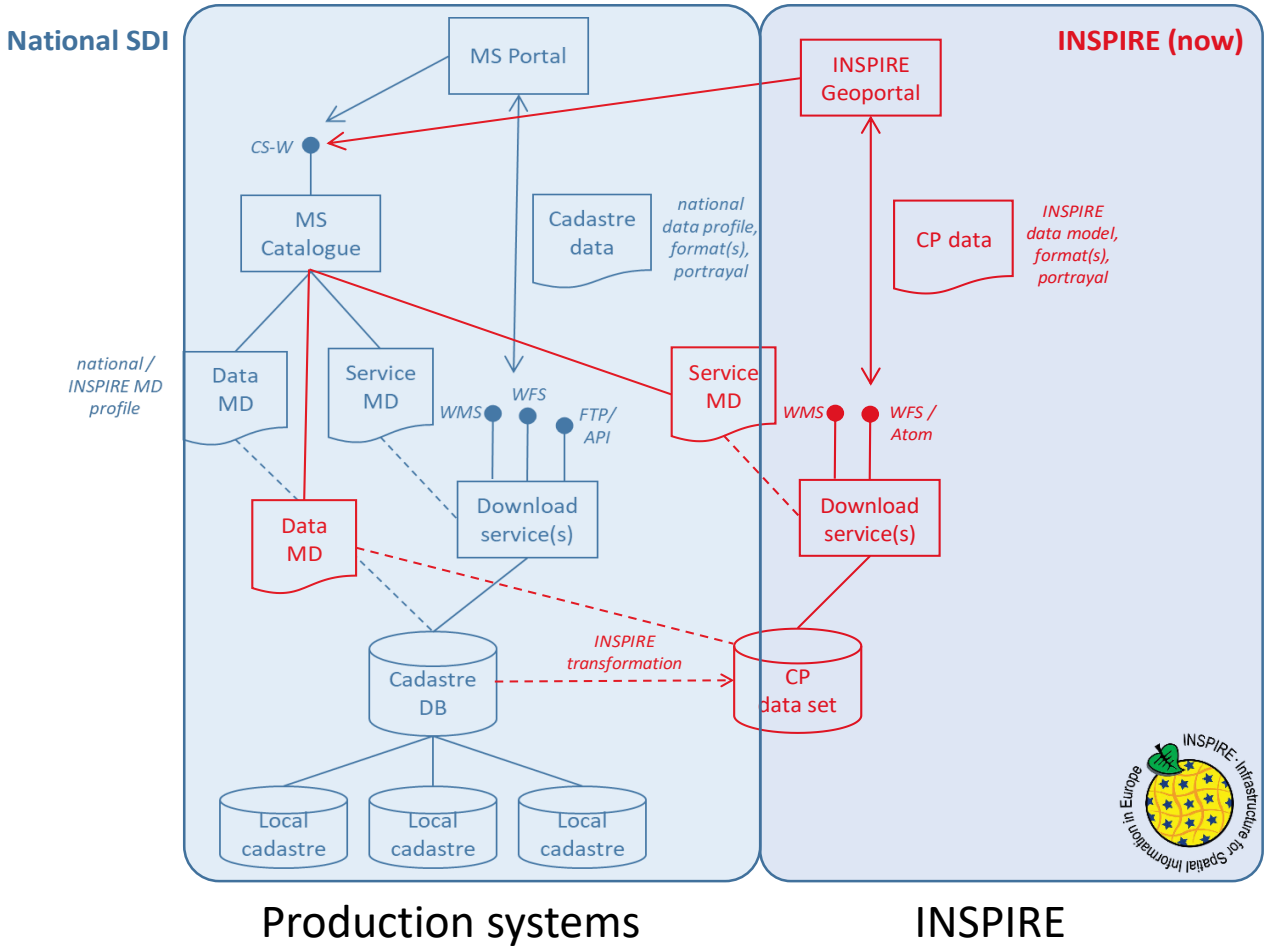






Lessons learned - What does not work so well
Inappropriate organisational approaches

- Parallel implementations.
- Duplication of efforts.
- INSPIRE sometimes implemented to only check a box.



Lessons learned - What does not work so well
Rigidity in standardisation

- Adherence to specific technologies / encodings.
- Strictly following standards vs. Narrow use of standards.
- Custom extensions: Extending standards is problematic.
  - Extended capabilities.
  - GML attributes.
  - Nested structures.

Lessons learned - What does not work so well
Complexity

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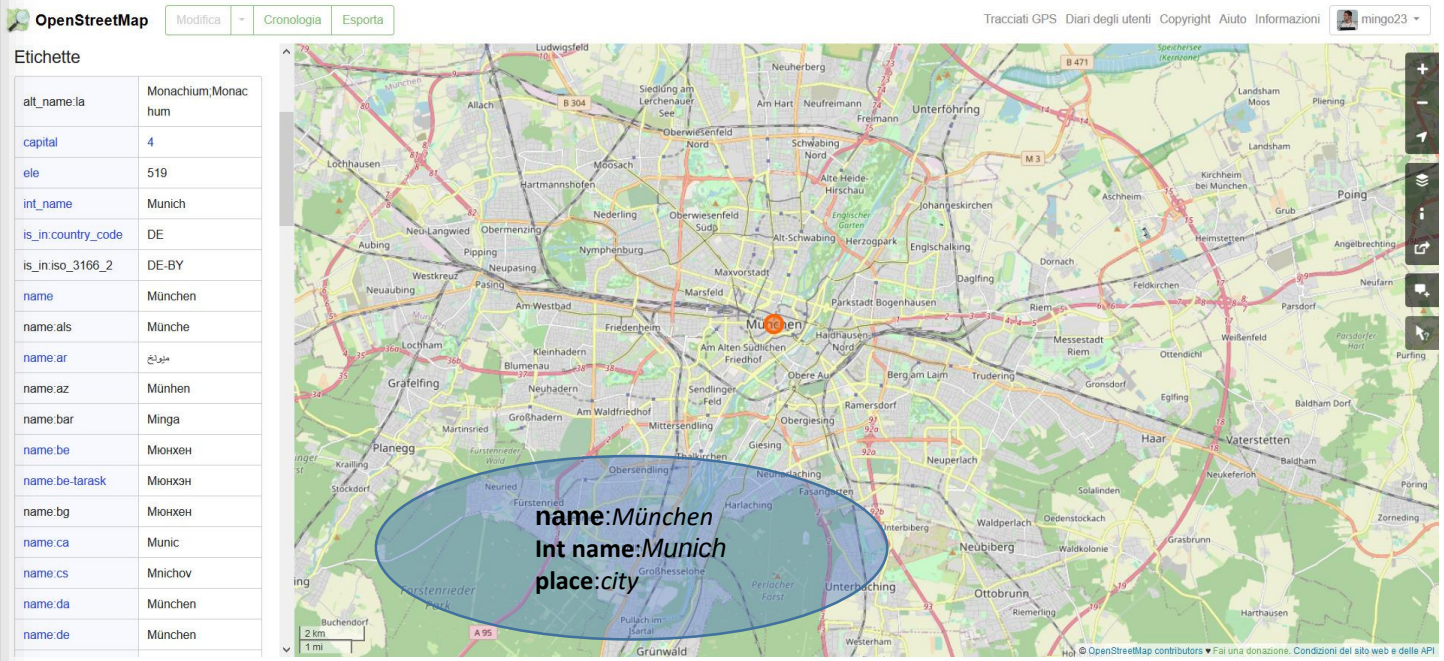
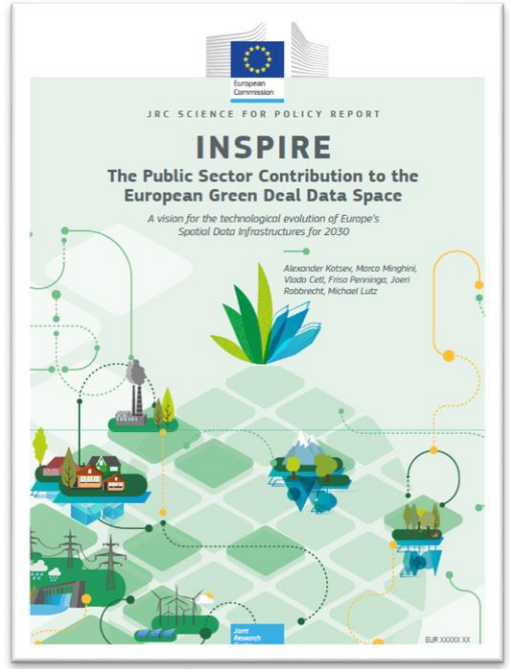


https://www.openstreetmap.org/node/1700534808#map=12/48.1332/11.6462

Vision for the future

- INSPIRE should ‘blend in’ with the broader ecosystem of spatial and non-spatial data, infrastructures, technologies and policies.
- This will mean opening up to a broader community of implementers and users and to a wider range of applications and use cases.
- Making the INSPIRE framework more flexible and agile will significantly lower the entry level to the sharing and utilisation of data.
- Technical approaches need to be simplified by reusing well-adopted standards and technologies.



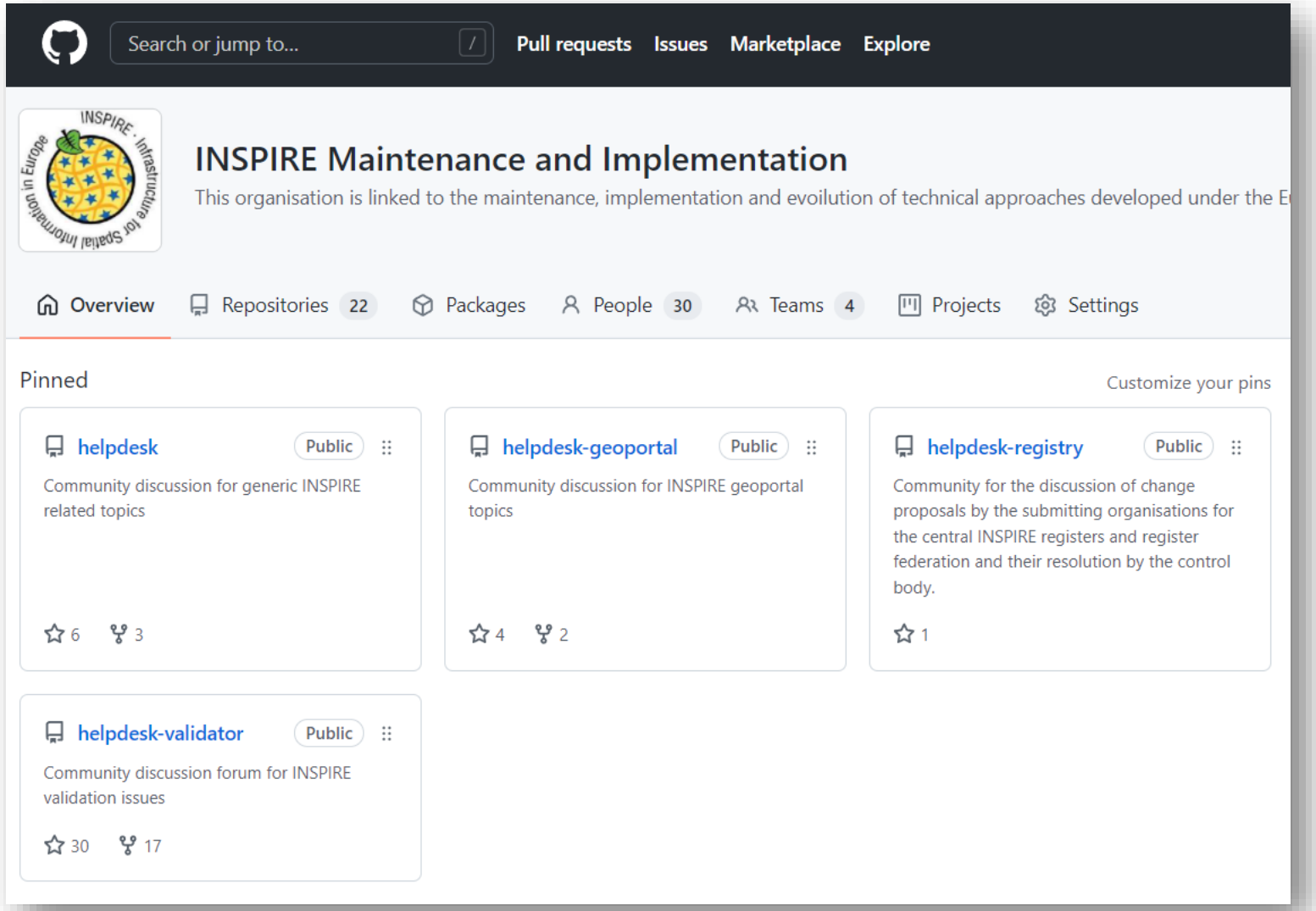
MIWP 2021-2024 Examples
'Mainstreaming' INSPIRE - GitHub

- **GitHub works!**

2 Levels of support:

Level 1 – General support that includes checking, immediate answering and moving questions to the right Level 2.

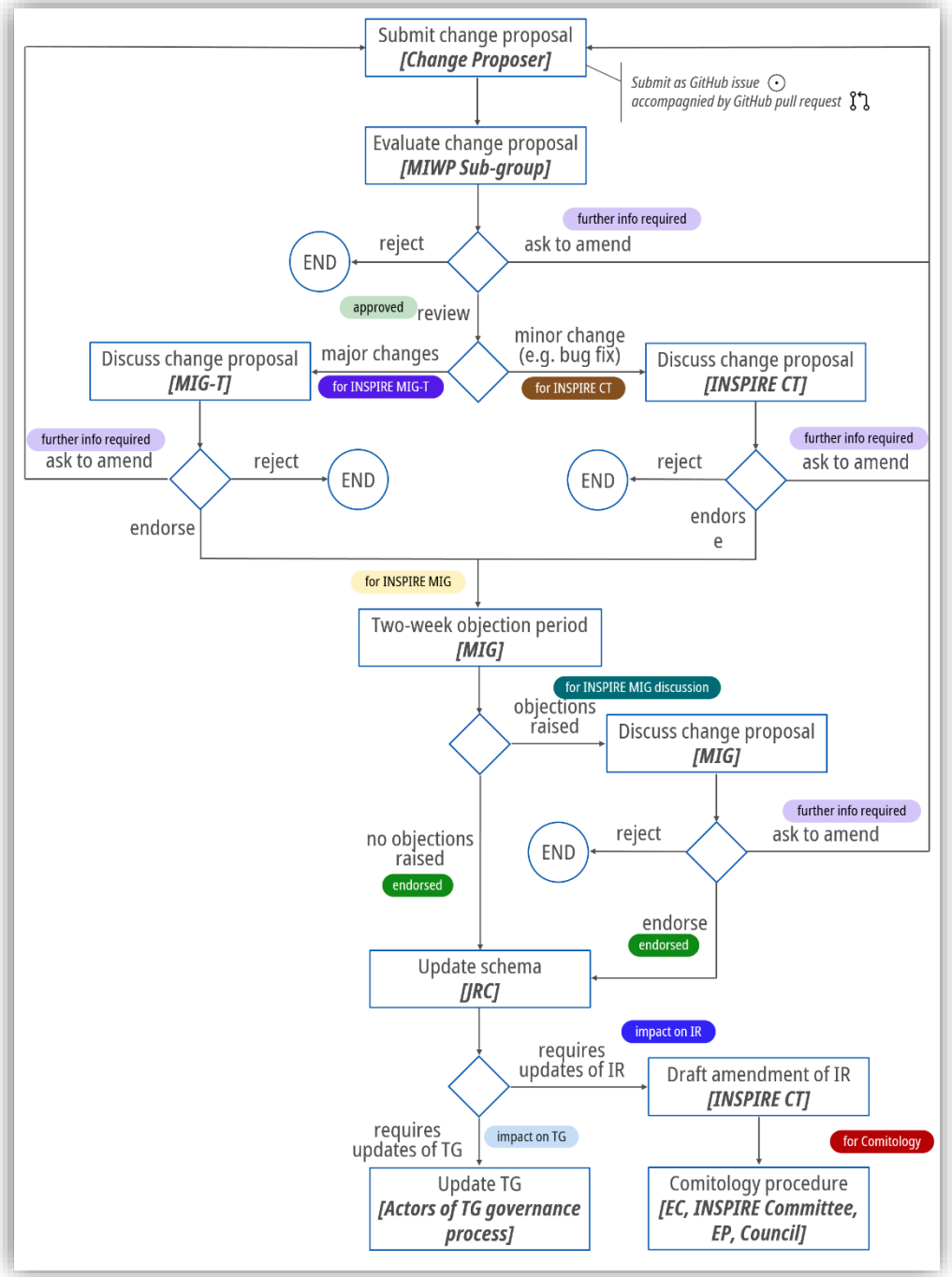
Level 2 – Provision of concrete solution.



https://github.com/INSPIRE-MIF

MIWP 2021-2024 Examples
Governance of artefacts

- Open the floor to proposals from the community.
- Transparent approach for governance of the artefacts:
  - Sub-group and facilitators.
  - Decision tree and release plan:
    - Know how to approach each issue.
    - 2 Releases are planned per year, aligned with the MIG-T Meetings.



MIWP 2021-2024 Examples
The Toolbox

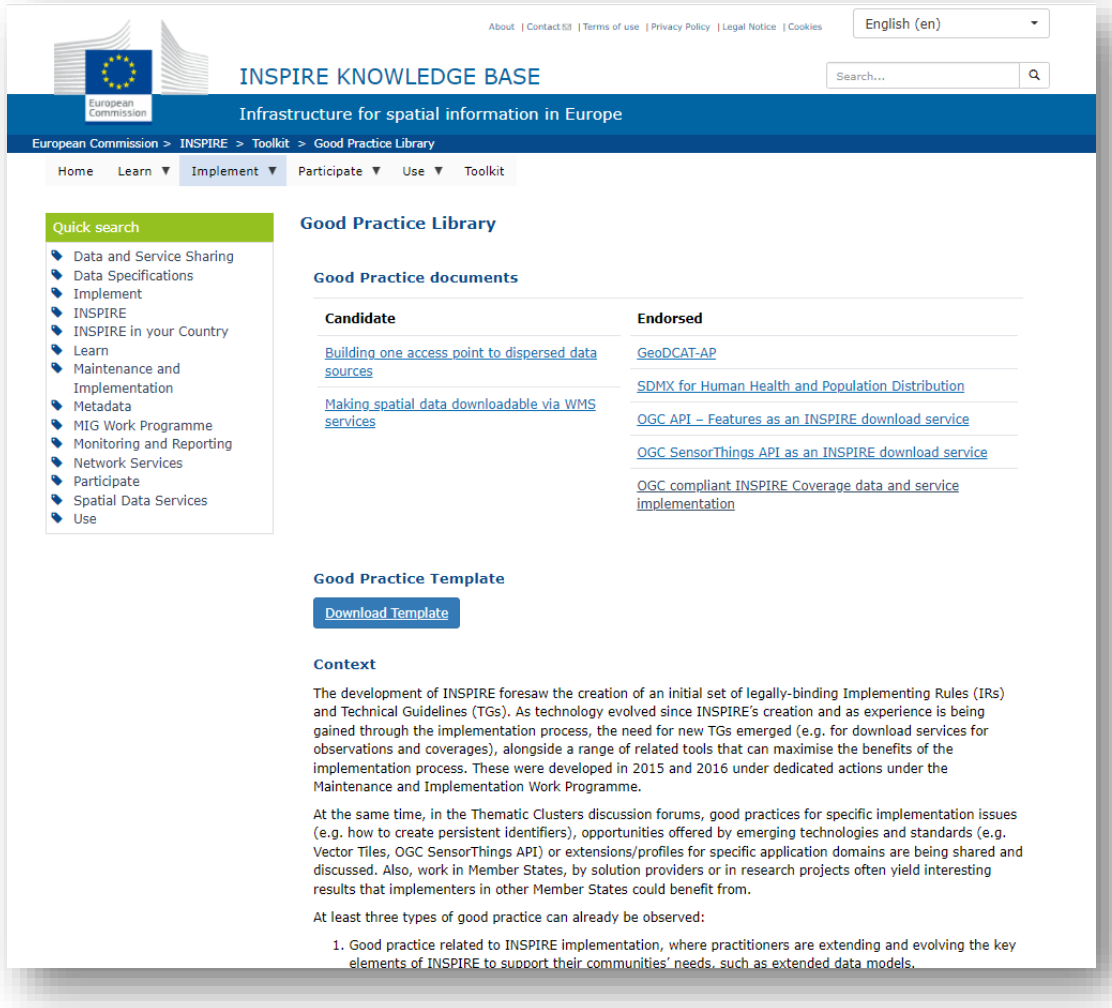
- Ensure long-term sustainability of the components
- Build strategic partnerships with communities:
  - GeoNetwork as geoportal backend.
  - Registry in OSGeo.
- Decouple tools from infrastructure.
- Extensive use of the cloud.

MIWP 2021-2024 Examples

Modernise the technological stack of INSPIRE within the remit of legislation

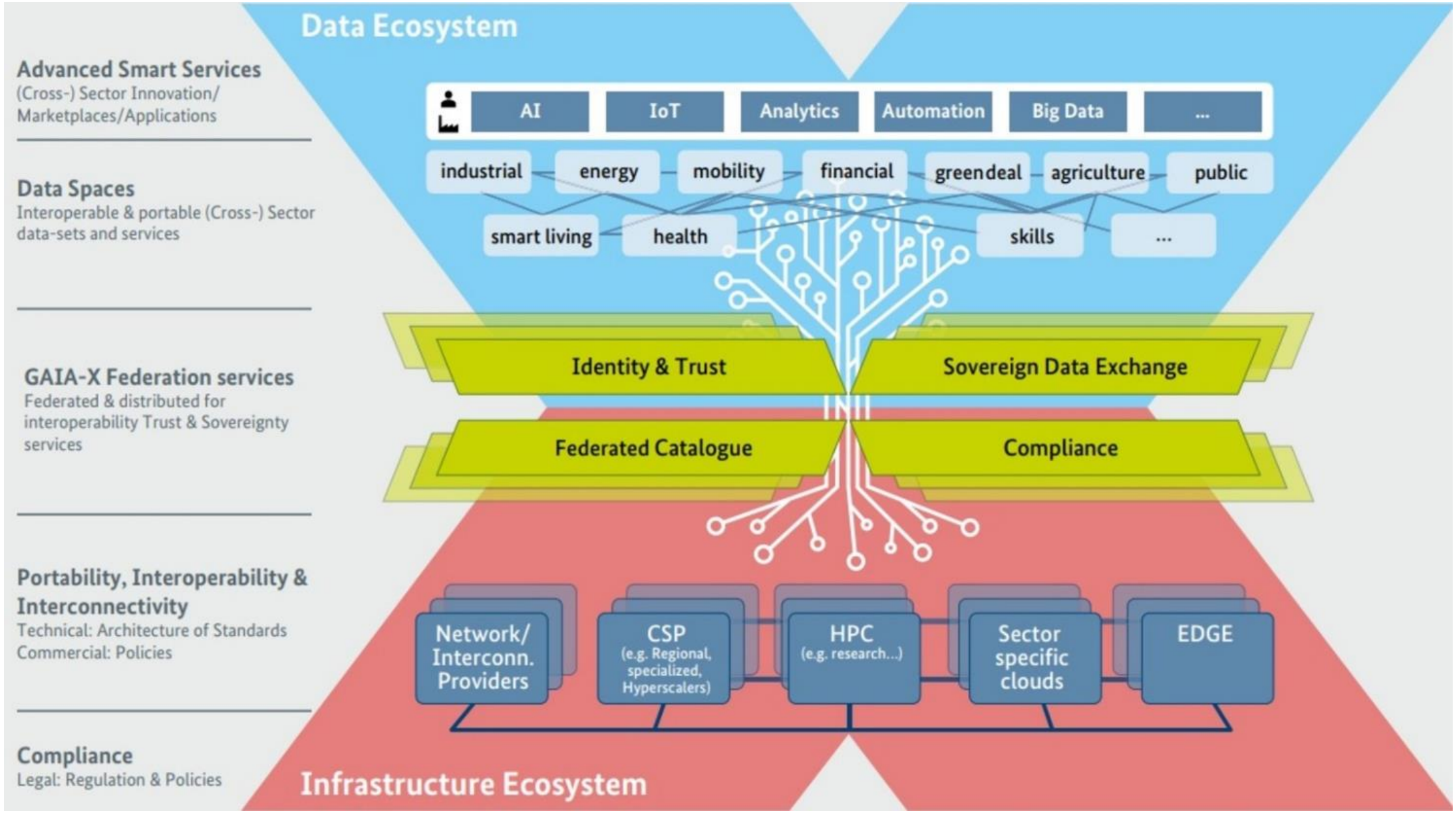
- **Good practices**.
- Updated Good Practice library available.
- Procedure for endorsement:
  - *Step1. Initiation.*
  - *Step 2. Submission as good practice candidate.*
  - *Step 3. Outreach.*
  - *Step 4. Submission.*
  - *Step 5. Legal scrutiny.*
  - *Step 6. Feedback.*

https://inspire.ec.europa.eu/portfolio/good-practice-library



Conceptual integration of INSPIRE datasets and services with GAIA-X

MIWP 2021-2024 Examples GAIA-X



GAIA-X and INSPIRE

Contractor: Fraunhofer IOSB

Objective: Hands-on evaluation of the GAIA-X architecture in the context of a relevant INSPIRE use case

Tasks:

1) Shortlist and prioritise INSPIRE use cases, incl. the necessary datasets and services
2) Mandatory and optional steps for implementing the selected use case
3) Conceptual implementation, incl. the necessary artefacts
4) Summary of the activities and steps towards a prototypical implementation
5) Webinar

Want to know more …

THURSDAY 28/10

10:00-11:30

Modernising INSPIRE within the European Green Deal data space – a technological and organisational perspective

13:30-15:00

Data exchange and harvesting - e-Reporting and thematic portals

15:30-17:00

Smart from local to global

FRIDAY 29/10

10:00-11:30

Location based data for crisis management

13:30-15:00

Closing Session - Towards a Common European Green Deal data space for environment and sustainability

Location interoperability good practices – ELISE framework and support

Francesco Pignatelli

European Location Interoperability Solutions for e-Government

Enabling Digital Government through Geospatial and Location Intelligence

14/10/2021

UN-GGIM Europe Side Event: European Data Policy

A BIT OF HISTORY...

2004

IDABC: Interoperable Delivery of European eGovernment Services

2010

ISA: Interoperability solutions for public administrations

- **Actions**:
  - EULF
  - ARE3NA

2016

ISA²: Interoperability Solutions for European Public Administrations, Businesses and Citizens

- **ELISE**

2021

DIGITAL: Digital Europe Programme

ELISE builds upon the outcomes of the former ISA actions EULF and ARE3NA. It is the only action of the ISA² Programme, aiming to improve Digital Government through Location Interoperability.

European Commission

WHAT?

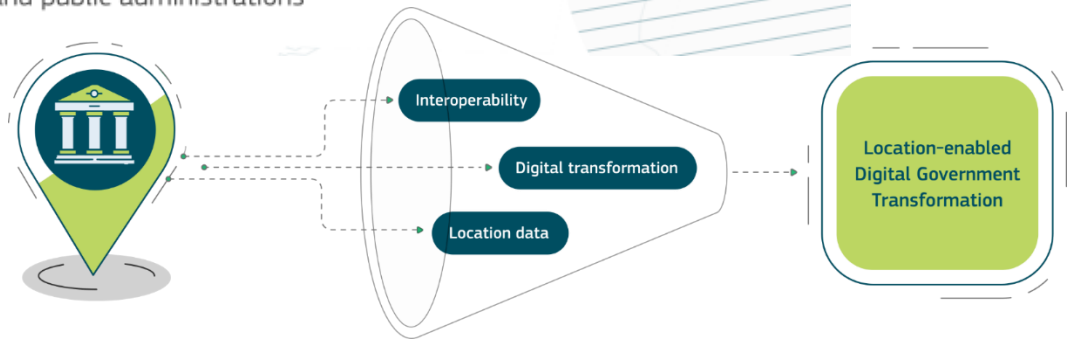
ELISE stands for **E**uropean **L**ocation **I**nteroperability **S**olutions for e-Government. It is one of the more than 50 actions in the European Interoperability Programme ISA².

WHAT FOR?

To support Digital Government Transformation by making the best use of location data and technologies in an interoperable manner

FOR WHOM?

For all: citizens, businesses and public administrations



ISA²

ELISE outputs and topics

41 Studies

1 Framework (Guidance/Monitoring)
11 Solutions

6 Applications

52 Webinars / 22 Workshops

ELISE impact in numbers

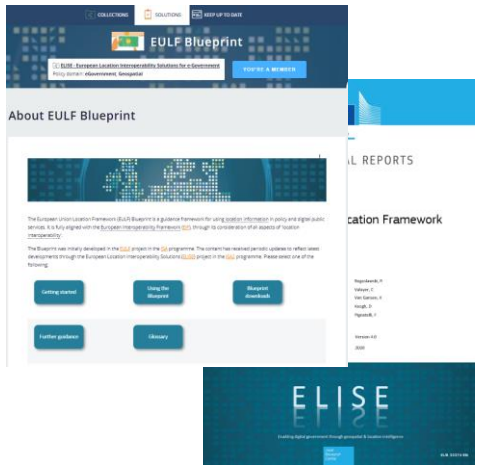
More than 10,000 interactions with ELISE over the past 6 years

- Evolution of Spatial Data Infrastructures
- Support of data ecosystems
- Technologies for location -enabled innovation
- Collaboration models
- Spatial skills for Digital Government Transformation
- Location data privacy
- Improving access to spatial datasets
- Supporting cross-border and cross-sector data sharing
- Location intelligence for policy and digital public services
- Supporting innovation, growth and Return of Investment
- Managing data quality
- Supporting the creation of common EU public services

ELISE - European Location Interoperability Solutions for e-Government | Joinup (europa.eu)

European Union Location Framework (EULF) Blueprint – What is it?

*A **European 'location interoperability framework'** with **guidance** for the **exchange** and **use** of location information in government policy and digital public services, allied closely to the interoperability principles and scope of the **EIF***



Online and downloadable versions

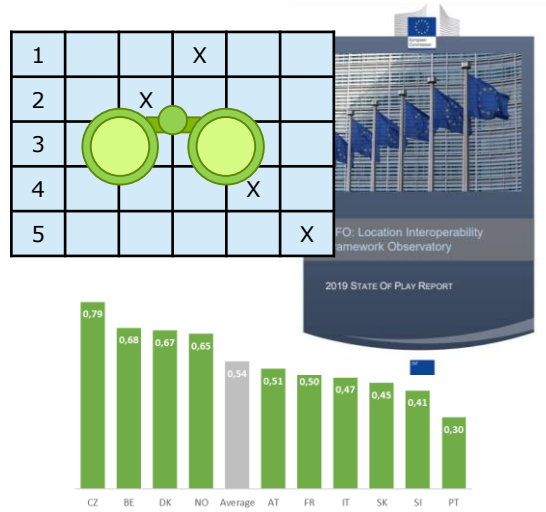
5 FOCUS AREAS

19 RECOMMENDATIONS

6 ROLES

2 RELATED FRAMEWORKS

49 BEST PRACTICES

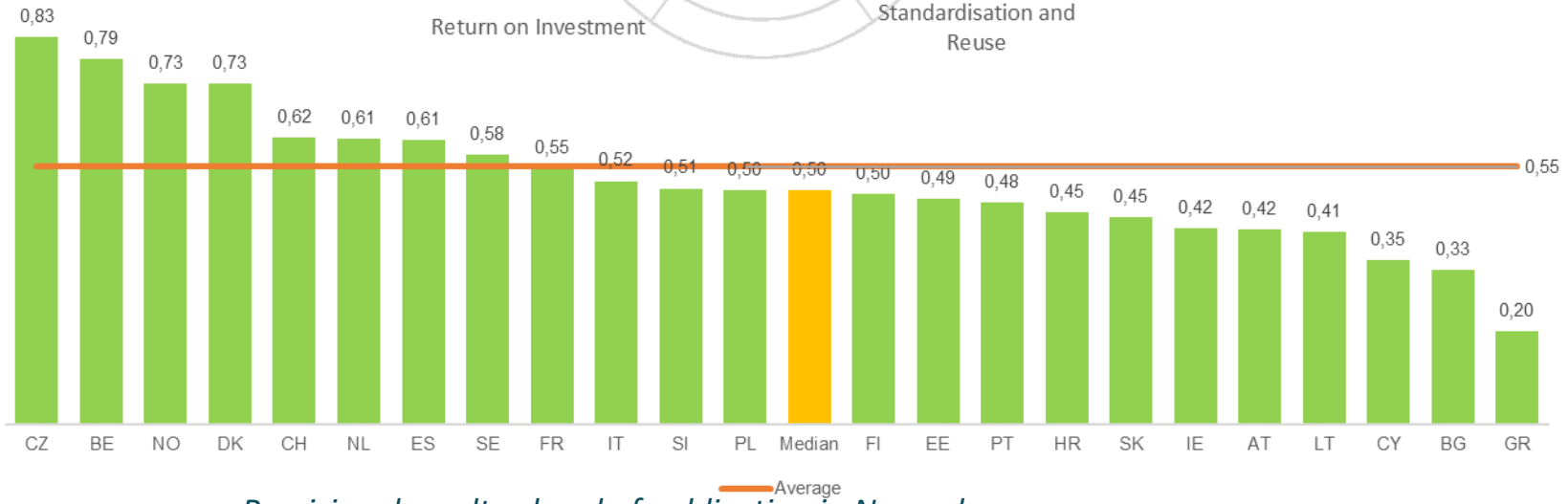


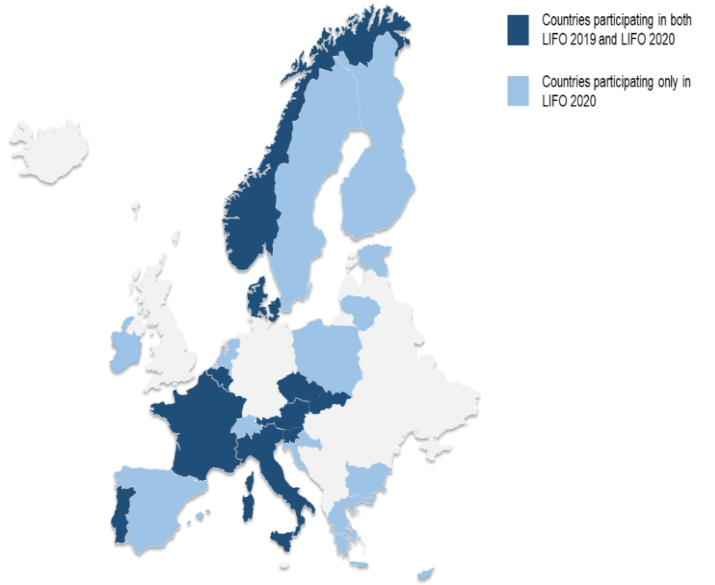
Adoption monitored through the LIFO

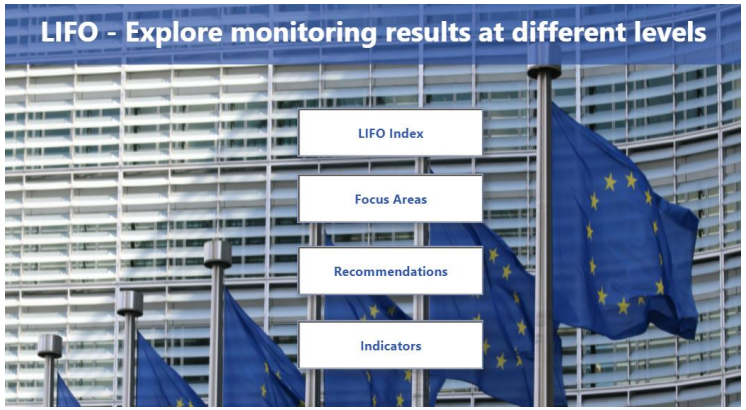
European Union Location Framework (EULF) Blueprint | Joinup

Location Interoperability Framework Observatory (LIFO) | Joinup

LIFO Monitoring 2020







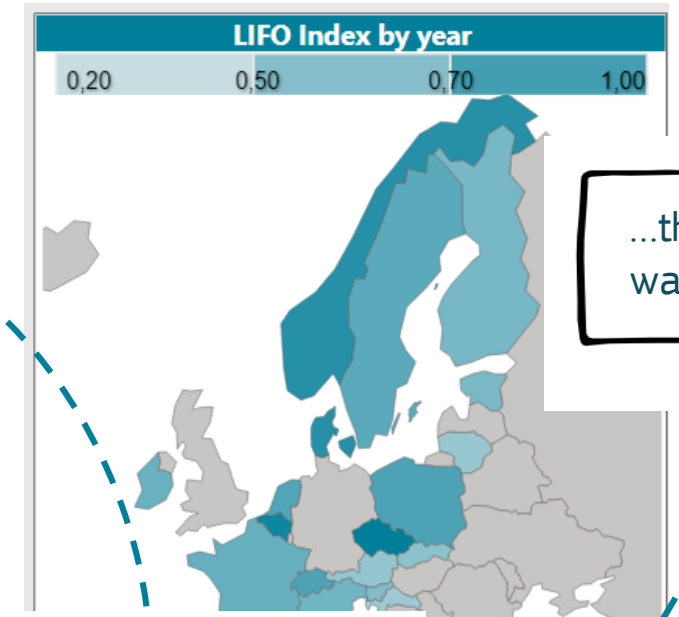
Provisional results ahead of publication in November

https://joinup.ec.europa.eu/node/704247

LIFO Interactive tool

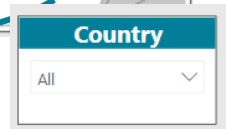
Tailor your LIFO journey!

Choose which **level** to investigate…

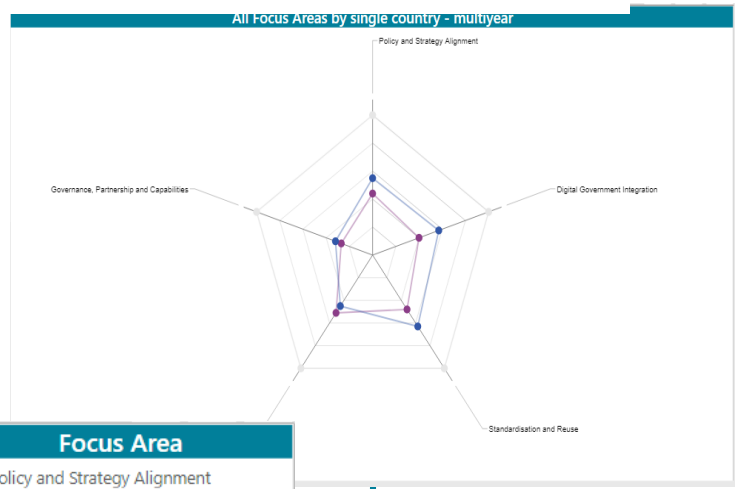


…the **year** you want to consider…

…identify the **countries** you want to compare…



…and which **visualisation** (heat map, radar chart) and **recommendation/focus area/indicator** to display!



Please visit LIFO interactive tool at https://joinup.ec.europa.eu/node/704247

EULF Blueprint / UN-GGIM IGIF links

Detailed two way cross references between EULF Blueprint recommendations and IGIF strategic pathways, key elements, actions and tools

EULF BLUEPRINT RECOMMENDATION TOPICS		UN-GGIM IGIF STRATEGIC PATHWAYS								
		Governance and Institutions	Policy and Legal	Financial	Data	Innovation	Standards	Partnerships	Capacity and Education	Communication and Engagement
Policy and Strategy Alignment	1. Digital policy alignment	X	X			X				
	2. Data policy alignment		X							
	3. Location data privacy		X							
	4. Location data for policy evidence				X	X				
	5. Standards based procurement				X		X			
Digital Government Integration	6. Location enabled digital public services					X				
	7. SDI integration	X	X		X	X				
	8. Open and collaborative development							X		X
	9. Location-based statistics				X	X				
Standardisation and Reuse	10. Common architecture				X	X				
	11. Authentic data reuse				X	X				
	12. Use of standards						X			
	13. Location data quality				X					
Return on Investment	14. Assessing and monitoring benefits	X	X	X						
	15. Communicating benefits	X	X	X						
	16. Innovation through access to data		X			X				
Governance, Partnerships and Capabilities	17. Integrated governance	X								
	18. Effective partnerships							X		
	19. Communication and skills			X					X	X

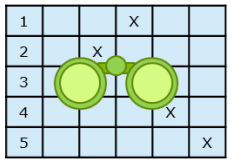
Building on ELISE for the Digital Europe Programme

Digital Europe Programme Themes

- High performance computing
- Cloud, data and AI
- Cybersecurity
- Advanced digital skills
- Accelerating best use of technologies

European Location Intelligence and Technological Enablers (ELITE)

EULF Blueprint



LIFO

Interoperability Academy

Data Spaces Cookbook

Sandboxing

Common Services Platform

ETF Validator

Re3gistry

Source:
Digital Europe Programme

Thank you

Join the *ELISE* community on